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IS 11996 (1987): Deltamethrin EC [FAD 1: Pesticides and Pesticides Residue Analysis]



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“Knowledge is such a treasure which cannot be stolen”

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IS : 11996 - 1987

Indian Standard
SPECIFICATION FOR
DELTAMETHRIN EC

UDC 632.951 DEL

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BUREAU OF INDIAN STANDARDS
BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

ISI

October 1987

Indian Standard

SPECIFICATION FOR DELTAMETHRIN EC

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**AMENDMENT NO. 1 OCTOBER 1991
TO
IS 11996 : 1987 SPECIFICATION FOR DELTAMETHRIN
EC**

(*Page 4, clause 2.3.1*) — Substitute the following for the existing clause:

'2.3.1 Deltamethrin Content — When determined by the method prescribed in Appendix A of IS 12005 : 1987 ‡, the observed deltamethrin content, percent (m/m) of any of the samples shall not differ from the declared nominal value by more than the percent tolerance limits indicated below:

<i>Nominal Value, Percent</i>	<i>Tolerance, Percent</i>	
Up to 9	+ 10 - 5	} of the nominal value'
Above 9 and below 50	± 5	
50 and above	+ 5 - 3	

(FAD 1)

Reprography Unit, BIS, New Delhi, India

**AMENDMENT NO. 2 JULY 1994
TO
IS 11996 : 1987 SPECIFICATION FOR
DELTAMETHRIN EC**

(Page 4, clause 2.2.5) — Delete.

(Page 6, clause 4.1) — Substitute the following for the existing:

'When freshly manufactured material in bulk quantity is offered for inspection, representative samples of the material shall be drawn and tested as prescribed in IS 10627 : 1983 within 90 days of its manufacture. When the material is offered for inspection after 90 days of its manufacture, sampling shall be done as prescribed in IS 10627 : 1983. However, the criteria for conformity of the material when tested, shall be the limits of tolerances, as applicable over the declared nominal value and given under clause 2.3.1 of the standard.'

(FAD 1)

Reprography Unit, BIS, New Delhi, India

Indian Standard

SPECIFICATION FOR DELTAMETHRIN EC

0. FOREWORD

0.1 This Indian Standard was adopted by the Bureau of Indian Standards on 30 April 1987, after the draft finalized by the Pest Control Sectional Committee had been approved by the Agricultural and Food Products Division Council and the Chemical Division Council.

0.2 Deltamethrin EC is used as an insecticide.

0.3 Deltamethrin EC is generally manufactured to contain 2.8 percent (m/m) of deltamethrin.

0.4 In the preparation of this standard, due consideration has been given to the provisions of the *Insecticides Act, 1968* and the Rules framed thereunder. However, this standard is subject to the restriction imposed under the Act and Rules, wherever applicable.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements, and methods of sampling and test for deltamethrin EC.

2. REQUIREMENTS

2.1 Constituents — The material shall consist of deltamethrin, technical dissolved in suitable solvent(s) together with emulsifying agent(s) and with or without stabilizer(s).

2.1.1 Deltamethrin, technical employed in the formulation of this material shall conform to IS : 12005-1987†.

*Rules for rounding off numerical values (*revised*).

†Specification for deltamethrin, technical.

2.2 Physical — The material shall comply with the physical requirements specified in 2.2.1 to 2.2.4.

2.2.1 Description — The material shall be yellow to brown coloured, homogenous and stable liquid. Sediment and/or suspended matter shall be negligible. On dilution with water, it shall readily form an emulsion, suitable for spray.

2.2.2 Cold Test — No turbidity or separation of solid or oily matter or both shall occur when the material is subjected to the cold test at 10°C or any other lower temperature as agreed to between the purchaser and the supplier, as prescribed in 13.1 of IS : 6940-1982*. Introduction of a seeding crystal is not necessary for the test.

2.2.3 Flash Point (Abel) — When determined by the method prescribed in IS : 1448 [P : 20]-1960†, the flash point of the material shall be above 24.5°C

2.2.4 Emulsion Stability — Any separation including creaming at the top and sedimentation at the bottom of 100 ml of emulsion prepared in standard hard water with 2.0 ml of concentrate for agricultural use, shall not exceed 2.0 ml when tested by the method prescribed in 13.3 of IS : 6940-1982*.

2.2.5 Heat Stability — After treating in accordance with the method prescribed in 13.4 of IS : 6940-1982*, the material shall comply with the requirements specified in 2.2.1 to 2.2.4 and 2.3.1.

NOTE — The material need not be put to heat treatment and testing for requirements specified in 2.2.1 to 2.2.4 and 2.3.1, if the product has crossed half of its self-life as ascertained from date of manufacture and date of expiry declared on the container.

2.3 Chemical — The material shall comply with the chemical requirements specified in 2.3.1 and 2.3.2.

2.3.1 Deltamethrin Content — When determined by the method prescribed in Appendix A of IS : 12005-1987‡, the observed deltamethrin content, percent (m/m), of any of the samples shall not differ from the declared nominal value by more than the percent tolerance limits indicated below:

Nominal Value, Percent	Tolerance, Percent	
Up to 9	± 10	} of the nominal value
Above 9 and below 50	± 5	
50 and above	+ 5 - 3	

*Method of tests for pesticides and their formulations (first revision).

†Methods of tests for petroleum and its products: [P : 20] Flash point by Abel apparatus.

‡Specification for deltamethrin, technical.

2.3.1.1 The actual value of deltamethrin content in the formulations shall be calculated to the second decimal place and then rounded off to the first decimal place before applying the tolerances given in 2.3.1.

2.3.1.2 The average deltamethrin content of all the samples taken shall not be less than the declared nominal content.

2.3.2 Acidity/Alkalinity — When tested by the method prescribed in 11.3 of IS : 6940-1982*, the acidity (as H_2SO_4) shall be not more than 0.05 percent by mass. The product shall not be alkaline to litmus paper, when tested according to 11.3.1.1 of IS : 6940-1982*.

3. PACKING AND MARKING

3.1 Packing — The material shall be packed according to the requirements given in IS : 8190 (Part 2)-1980†.

3.2 Marking — The container shall bear legibly and indelibly the following information and any other information as is necessary under the *Insecticides Act* and Rules:

- a) Name of the material;
- b) Name of the manufacturer;
- c) Batch number;
- d) Date of manufacture and date of expiry;
- e) Net mass;
- f) Nominal deltamethrin content, percent (*m/m*); and
- g) A cautionary notice worded as in *Insecticides Act* and Rules.

3.2.1 Each container may also be marked with the Standard Mark.

NOTE — The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

*Method of tests for pesticides and their formulations (*first revision*).

†Requirements for packing of pesticides: Part 2 Liquid pesticides (*first revision*).

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4. SAMPLING

4.1 Representative samples of the material shall be drawn as prescribed in IS : 10627-1983*.

5. TESTS

5.1 Tests shall be carried out by the appropriate methods referred to in 2.2.2 to 2.2.5, 2.3.1 and 2.3.2.

5.2 Quality of Reagents — Unless specified otherwise, pure chemicals and distilled water (*see* IS : 1070-1977†) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

*Methods for sampling of pesticidal formulations (*first revision*).

†Specification for water for general laboratory use (*second revision*).

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Base Units

QUANTITY	UNIT	SYMBOL
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	DEFINITION
Force	newton	N	1 N = 1 kg.m/s ²
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m ²
Frequency	hertz	Hz	1 Hz = 1 c/s (s ⁻¹)
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m ²

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